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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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E Joseph Gess
Burns Doane Swecker & Mathis
P O Box 1404
Alexander, VA 22313-1404

EXAMINER	
HOPKINS, ROBERT A	

ART UNIT	PAPER NUMBER
1797	

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03/31/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/536,723	PY ET AL.	
	Examiner	Art Unit	
	Robert A. Hopkins	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE filed 3-20-09*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-29* is/are rejected.

7)☒ Claim(s) *3 and 30-32* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3-20-09 has been entered.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1,4,5,7-27 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Worley et al(2003/0054141).

Worley et al teaches a composite material comprising an active solid and a phase change material, wherein the phase change material takes the form of

micronodules having an average size of between 1 micron and 5 millimeters(paragraph [0044], the phase change material is selected from materials with a liquid/solid phase change temperature of between -150 degrees C and 900 degrees C, the active solid is selected from solids that can be used in a method involving reversible physicochemical processes that are exothermic in one direction and endothermic in the opposite direction. Worley et al further teaches wherein the active solid comprises a porous and/or microporous solid that can be used in a reversible adsorption process(paragraph [0044] lines 15-26). Worley et al further teaches wherein the porous and/or microporous active solid is selected from activated charcoals, zeolites, activated alumina or silica gels. Worley et al further teaches wherein the phase change material is a congruent melting salt, wherein the congruent melting salt is selected from hydrated or unhydrated halides, hydrated or unhydrated carbonates, hydrated or unhydrated sulfates, phosphates, nitrates, or hydroxides. Worley et al further teaches wherein the phase change material is a metal. Worley et al further teaches wherein the active solid takes the form of particles or monoliths. Worley et al further teaches wherein the composite material comprises a porous or microporous active solid, in the form of monoliths or particles, the micronodules occupying the pores of the active solid. Worley et al further teaches wherein the composite material is formed by mixing particles or monoliths of active solid and micronodules, the micronodules occupying the spaces between the particles or monoliths of active solid. Worley et al further teaches wherein the composite material comprises particles or monoliths of active solid on the surface of which the micronodules are fixed, either by chemical grafting or by bonding with an

adhesive. Worley et al further teaches wherein the composite material comprises a mixture of particles or monoliths of active solid, and particles of a support material on which the micronodules are fixed. Worley et al further teaches wherein the composite material comprises one or a plurality of monoliths of active solid in which the micronodules are distributed. Worley et al further teaches wherein the composite material further contains expanded natural graphite.

Claims 2,28 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Worley et al(2003/0054141).

Worley et al teaches a composite material comprising an active solid and a phase change material wherein the phase change material takes the form of micronodules having an average size of between 1 micron and 5 millimeters(paragraph [0044], the phase change material is selected from materials with a liquid/solid phase change temperature of between -150 degrees C and 900 degrees C, the active solid is selected from solids that can be used in a method involving reversible physicochemical processes that are exothermic in one direction and endothermic in the opposite direction, wherein the active solid comprises a reactive solid than can be used in a reversible chemical reaction.

Claim 6,29 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Worley et al(2003/0054141).

Worley et al teaches a composite material comprising an active solid and a phase change material wherein the phase change material takes the form of micronodules having an average size of between 1 micron and 5 millimeters(paragraph

[0044], the phase change material is selected from materials with a liquid/solid phase change temperature of between -150 degrees C and 900 degrees C, the active solid is selected from solids that can be used in a method involving reversible physicochemical processes that are exothermic in one direction and endothermic in the opposite direction, wherein the phase change material is a paraffin or a mixture of paraffins.

Allowable Subject Matter

Claims 3 and 30-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3 recites “wherein the reactive solid is selected from haildes, carbonates, or hydroxides”. Worley et al fails to teach a reactive solid which is selected from haildes, carbonates, or hydroxides. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a reactive solid which is selected from haildes, carbonates, or hydroxides because Worley et al does not suggest such a modfication.

Claims 30-32 recites “wherein the composite material is a mixture of particles or monoliths of active solid, and the micronodules”. Worley et al teaches an active solid which is impregnated with a phase change material. It would not have been obvious to someone of ordinary skill in the art at the time of the invention to provide a the composite material which is a mixture of particles or monoliths of active solid, and the micronodules because Worley et al does not suggest such a modification.

Response to Arguments

Applicant's arguments filed 10-29-08 have been fully considered but they are not persuasive.

Applicant argues Worley et al discloses that the containment structure is impregnated with the phase change material, and Applicant further argues that even if the containment structure materials could have been considered as porous or microporous solids, Worley et al teaches that any such pores are impregnated with the phase change material. Applicant argues there is no explicit or implicit disclosure that the Worley et al article is capable of use in a method involving reversible physicochemical processes that are exothermic in one direction and enothermic in the opposite direction, as is the recited active solid.

Examiner notes that on the bottom of page 5 to the top of page 6 of the current specification is disclosed “the composite material according to the invention can be obtained in various forms. In a first embodiment , the material comprises a porous or microporous active solid, in the form of monoliths or particles, the micronodules occupying the pores of the active solid”. Therefore examiner respectfully submits that although in one embodiment that pores are impregnated with the phase change material, the composite material of Worley et al still meets the limitations of claims 1 and 2 because according to the current specification the active solid is capable of use in a method involving reversible physicochemical processes that are exothermic in one direction and enothermic in the opposite direction with micronodules occupying the pores of the active solid. Such a composite material is clearly taught by Worley et al.

Examiner respectfully submits the active solid may be activated charcoal, zeolite, activated alumina, or silica gel, and as noted in paragraph 0035 the phase change material can be a paraffinic material or hydrated salt, therefore Worley et al meets the criteria for the phase change material of claims 1 and 2 and also meets the criteria of the active solid of claims 1 and 2.

Applicants note that in an embodiment disclosed in the present application, wherein the composite material comprises a porous or microporous active solid and the micronodules occupying the pores of the active solid, the active solid is nevertheless usable in a method involving reversible physicochemical processes that are exothermic in one direction and endothermic in the opposite direction. Applicants argue that by comparison Worley et al does not disclose that its containment structure is usable in a reversible physicochemical process once its pores are occupied by the microcapsules of the phase change material.

Examiner respectfully submits that claims are directed to a composite material, and Worley et al clearly teaches the claimed components of the composite material, including an active solid selected from activated charcoals, activated alumina, zeolites, or silica gels(noting claim 5 of the current claims), and therefore because Worley et al clearly teaches all of the components of the claimed composite material, the active solid must be inherently capable of a reversible physicochemical process that is exothermic in one direction and endothermic in the opposite direction. Examiner notes MPEP 2112.01 which states “Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or

substantially identical processes, a *prima facie* case of either anticipation or obviousness has been established". Examiner respectfully submits that the claimed product and the product of Worley et al are identical in composition, therefore the claimed properties and functions relating to use in a method involving a reversible physicochemical process that is exothermic in one direction and endothermic in the opposite direction are presumed to be inherent with the composite material of Worley et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert A. Hopkins whose telephone number is 571-272-1159. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, every Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Rah
March 25, 2009

/Robert A Hopkins/
Primary Examiner, Art Unit 1797